

## Notes

Hideaki OHBA: **Notes on Tibetan Medication and Its Regional Interactions**

チベットの薬物誌ならびにチベット医薬への他地域からの影響 (大場秀章)

A disease is one of the greatest problems of us until now. Ancient time when peoples were ignorant the causes and pathogens they might panic at incurable disease. To cure any diseases we must know about the causes, however it was impossible to detect because of the lack of microscope or the knowledge on anatomy, physiology, physiopathology, and others. In such circumstances people believed that divinities might cause diseases.

In ancient time medications are the only practice for diseases, and the most of materials used for medications were collected from wild plants. Knowledge on wild plants is essential for herbalists who are persons taking a part collecting necessary plants and medications. Herbalists accumulated the knowledge on wild plants and their effective treatment for special diseases. A textbook concerned medicinal materials and medications used was their desk-side book. At present we call this *Materia medica* of which name comes from *De Materia Medica* by Pliny's contemporary man, Pedianos Dioskurides (Dioscorides).

The original text disappeared, but its magnificent illustrated copy made in early 6th century presumably in Constantinople has survived. This is called the *Codex Vindobonensis* of Dioscorides (Blunt and Raphael 1979). Over 10 centuries European herbalists placed this as the bases of medications, and published new *Materia medica* which were something renewal versions of Dioscorides' *Materia Medica*.

In ancient times there were many regional medical systems and medications throughout Eurasia. Such regional medications were autochthonously developed? Medical systems and medications are always received influence from outside. Varieties of human

diseases are nearly the same beyond regions, however the medications are regionally different because of the regional differences of the medical materials. The differences in regional *Materia medica* reflect the difference of regional floras which are formed under different environments and climates.

To make clear the interactions of regional medications a comparison between medicinal plants described in regional *materia medicae* will be significant. I will examine a significant Tibetan medical illustration, the *Blue Beryl* by Sanggye Gyamtso in the 17th century, and the possibility of the influence from other region.

**History of Tibetan medicine and its *Materia medica***—Tibetan medicine continues to be practiced throughout the vast domain of Tibetan culture which stretches from Ladakh in the West Himalaya eastward to Sichuan and Gansu through Tibet, Nepal, Bhutan and Yunnan (Meyer 1992). Fundamentally Tibetan culture was derived from that of Buddhism (Snellgrove and Richardson 1986). Actually medication is essential practice in Buddhism.

In early Buddhism, the therapy was aimed essentially at the mind and the monastic discipline imposed numerous restrictions to the administering of medicines or healing charms outside the community. However, the milieu of the Buddhist renunciates was more beneficial to the early development of medicine in India than that of orthodox Brahmanism, which was limited by the restraints of ritual purity (Zysk 1991).

Medicine was numbered among the five major sciences, along with the inner science of Buddha's word, grammar, epistemology, and the arts. The Buddhist pantheon was

then enriched with deities specializing in healing: two bodhisattvas, the King of Remedies (Bhaisajyaraja) and the Supreme physician (Bhaisajyasamudgata), appear in Mahayanist texts compiled at the beginning of the common era.

Towards the end of the 3rd century Bhaisajyaguru, Master of Remedies, eclipsed with association to an Eastern paradise or buddhafield. His thought enjoyed a great success in Central Asia, then in the Far East, and later in Tibet. Nevertheless any medical texts is not known to exist, apart from a famous text, *Four Tantras*, and its iconograph, which are as such ascribed to Bhaisajyaguru or the Buddha Sakyamuni. A some number of the extant sermons and tantric texts are devoted to illnesses and their treatment.

**Foreign influence to Tibetan medicine in 7th century**—In the 7th century Tibet was unified for the first time under the authority of a royal dynasty and became a redoubtable expansionist power open to the influence of neighbouring civilizations. The influence found beyond the borders in not only Buddhism, but also the sciences such as medicine connected with it.

Tibetan medicinal learning was born in the first half of the 7th century at the time of the reign of King Songtsen Gampo (Rechung Rinpoche 1973). Rinpoche wrote that Songtsen Gampo and some his descendants invited doctors to their court from neighbouring countries; India, China, Iran, Nepal, Kashmir, and others, and their physicians translated representative texts into Tibetan under royal patronage.

Meyer (1992) introduced an example of cultural exchange. A famous doctor named Galenos came from the Byzantine countries (Phrom) by way of Persia. This name is evidently a reference to Galen, the famous Greek doctor of the 2nd century. This is an evidence that the Tibetan tradition provides a remote echo of the influence of Greek medi-

cine. It was probably the ages during the royal dynastic period (the 7th to the 9th centuries) by way of the Arab conquest of Persia.

Under the Tibetan monarchy, two Chinese princesses, Mun Chang and Kim Shang, who married Tibetan Kings, Srong-brtsan-sgam-po (in 641) and Khri-ide-gtsung-brtsan (in 710), brought texts of medical works. During the reign of King Thrisong Detsen in the second half of 8th century, the tantric master Padmasambhava is said to have introduced the cult of the Medicine Buddha Bhaisajyaguru into Tibet, and received the Tibetan translation of the *Four Tantras* from the hands of his disciple Vairocana. Meyer also wrote that the great variety of foreign influences, especially Indian and Chinese, which according to later Tibetan historians, is believed to have nourished the origins of Tibetan medicine between the 7th and the 9th centuries, is confirmed by documents of the period discovered in the caves of Dunhuang, and by traces which subsist in subsequent medical literature.

The fall of the Tibetan royal dynasty occurred in 842 and led to an anarchy situation in 150 years in central Tibet. With the second diffusion of Buddhism, the diversity of cultural contacts which had marked Tibet during its early monarchy gave place to an essentially Indian influence not only Buddhism also medicine.

**Influence of Ayurvedic medicine**—In the 11th century the great Rinchen Zangpo translated a few Indian medical texts which would be included in the *Tanjur*, an anthology of translated treatises of Indian origins. They include several works attributed to Nagarjuna, the great Buddhist philosopher of 2nd century, and *Astangahrdayasamhita* by Vagbhata, a famous 7th century Indian Ayurvedic medicine. The *Astangahrdayasamhita* is accompanied by commentaries by the author and by another one which often came

to be cited by later Tibetan authors, the *Padarthacandrikaprabhasa* by Candranandana. He is an erudite Kashmiri of the second half of 10th century. Parallel to Ayurvedic medicine, there are other Indian concepts pertaining to the structure of the body, physiopathology and therapy, developed by the alchemical and tantric traditions which also reached Tibet. The influence of Ayurvedic medicine has reached to Mongol through Tibet (Anonymous 1971).

Two Yuthog Yontan Gonpo are distinguished to attribute the development of Tibetan medicine. Yuthog the Elder is said to be a contemporary of King Thrisong Detsen of the 8th century while Yuthong the Younger is said to have lived during the 12th century. The two are in particular related with the transmission of the *Four Tantras*.

Tantra is the term usually applied to treatise by modern commentators, but Mantrayâna (or Secret Mantra Vehicle) and Vajrayana (or Diamond Vehicle) were more usual in the past, though specialists would insist that all these terms are not strictly interchangeable (Snelling 1987). Tantra is primarily concerned with attainment of buddhahood, and offers peoples ways and means of integrating the magical into their lives and applying it to authentic spiritual purposes.

The *Four Tantras* was transmitted over the following centuries by various lineages of master and disciple, but also from father to son in family lineages. At the same time Tibetan medical literature was progressively enriched with numerous autochthonous works of diverse types, commentaries, independent treatises, handbooks of diagnostic or therapeutic techniques, pharmacopoeia, formularies for pharmaceutical preparations, and also works of history of medicine.

**Chagpori College of Medicine**—In the 17th century Tibetan civilization as a whole gained a maturity, which may be termed as classical, under the authority of the 5th Dalai

Lama. The intention of the regent Sangye Gyamtso to codify medicine in theory and practice resulted in the founding of Chagpori College of Medicine on the Iron Hill adjacent to the Potala Palace in 1696. In the 18th century medicine also flourished in Eastern Tibet where in 1727 Dilmar Geshe composed a vast repertoire of Tibetan *Materia medica*.

The commented version includes more than 2200 drugs and their subvarieties. However at the end of the 19th century the college of Chagpori in Lhasa declined and lead the 13th Dalai Lama to give a new impetus to medical learning by founding the Mentsikhang School of Medicine and of Astrology (Mentsikhang) in Lhasa in 1916. This new establishment was more oriented towards practice, and rapidly enjoyed a great reputation. Having undergone major changes since its founding, it continues to function to the present day.

**The *Four Tantras***—The *Four Tantras* is the abridged title of a book entitled *Tantra of Secret Instructions on the Eight Branches, the Essence of the Elixir of Immortality*, and the fundamental text of Tibetan medicine. It is indirectly illustrated via its commentary, the *Bleu Beryl* by Sangye Gyamtso.

Although the origin and history of the *Four Tantras* are still obscure, this treatise was the subject of lively debate among Tibetan scholars. According to recent studies the *Four Tantras* is the magnificent work highly structured of a Tibetan author of creative and original intelligence; probably Yuthog the Younger is the author, who, perhaps basing himself on an originally Indian texts, the *Astangahrdayasamhita* and the *Padarthacandrikaprabhasa*, created a synthesis of diverse origins.

Even though the short title The *Four Tantras*, it does not consist of four independent treatises. This is a presentation of the same medical doctrine from four dif-

ferent perspectives, and these four parts are preceded by an introductory scene which presents the source from which they derive: the Buddha Bhaisajyanguru in his celestial palace, surrounded by four retinues of gods, hermit sages, Hindu divinities, and Buddhists. Each of the *Four Tantras* is expounded by one of the four manifestations of the hermit sage Vidyajana and partly Manasija. As the four successive forms of Vidyajana each manifests one particular aspect of the same absolute buddhahood, so do each of the *Four Tantras* present a single medical doctrine from different perspectives.

The Root Tantra, related to the Buddhahood of Bhaisajyaguru, is a synopsis of all elements of the medical teaching. The Exegetical Tantra presents the general theoretical teaching on anatomy, physiology, physiopathology, and treatment. The Instructional Tantra presents medical teaching of practical use in the treatment of various kind of illnesses. The Subsequent Tantra is devoted to the diagnostic and therapeutic activities of the physician.

The *Four Tantra* shows influences to the origins of Tibetan medicine (Meyer 1981). The greater part of the physiological and physiopathological theories, and therapeutic techniques were borrowed from Indian medicine. The classification of internal organs into the five solid viscera and the six hollow viscera, and the examination of pulses and moxibustion testify to the connections with ancient Chinese medicine.

**Tibetan Materia medica and Sangye Gyamtso's Medical Paintings**—The *Blue Beryl* is a Tibetan medical illustration by Sangye Gyamtso, the scholar and Regent of Tibet, and serves as an erudite yet practical commentary on the ancient text entitled the *Four Tantra*. The *Blue Beryl* contains 80 medical paintings, and is prepared as a form of pictorial encyclopedia at the same time as the treatise as its visual aide-mémoire

(Gyurme Dorje 1992). As explained the treatise as well as the paintings are referred to even today by Tibetan physicians. The production of the *Blue Beryl* began in 1687. These paintings were produced by Lhobrag Norbu Gyamtso who did the outlining and Lhasawa Genyen applied the colours. The biography of the 6th Dalai Lama made clear that 62 of the totally 80 medical paintings were presented to the hierarch at the time of his enthronement. It was completed at least in 1703. This was kept at the School of Medicine and Astrology in Lhasa.

An authorized copy of this illustration was found at the altar of the former Cathedral of Ulan-Ude, capital of the republic of Buryatia. This was reproduced in 1920's at the time of 13th Dalai Lama for training of Buryati doctors in Transbaikalia. Two other copies are known to have survived in Tibet, at the School of Medicine and Astrology (Mentsikhang) and the Summer Palace of the Dalai Lama (Norbulingka). Recently this found in Buryatia was reproduced by Parfionovitch et al. (1992). The copy kept in Mentsikhang was also published in a Tibeto-Chinese by Wangle et al. in 1986 and Tibeto-English version by Byams-pa'phrin-las, Wang Lei and Cai Jing-feng in 1988 (see Meyer 1992).

#### **Plants in the Tibetan Materia medica—**

The *Four Tantras* consist of Root, Exegetical, Instructional, and Subsequent. Eight illustrations of the paintings of Exegetical Tantra are reasonable to be named Materia medica. In the Materia medica, medicines are classified into 15 classes: these are of 1) precious (metals and gemstones), 2) earth medications, 3) wood medications [in which nectarous and plateau medications, and so forth are included.], and 4) herbal medications, and other 11 classes derived from animal products like horn, bones, flesh, blood, and so on.

Plates 23 to 31 of Parfionovitch et al.'s

Table 1. Classes and Orders related to plants in Li Shizhen's *Bencao Gangmu*

Herbs	
1. Mountain herbs	78 kinds
2. Fragrant herbs	60 kinds
3. March plants or plants grown in moist habits	137 kinds
4. Poisonous plants	54 kinds
5. Climbing or creeping plants	113 kinds
6. Aquatic plants	29 kinds
7. Plants growing on rocks or in stony places	27 kinds
8. Mosses, lichens and fern-allies	18 kinds
9. Miscellaneous herbs not used in medicine	162 kinds
Grains	
1. Hemp, Wheat, Rice, and others	9 kinds
2. Millet and others	17 kinds
3. Fabaceous plants	13 kinds
[4.] Articles of food prepared from grains and pulse. Bean-curd, boiled rice, wine, yeast, bread, and congee.	
Vegetables	
1. Strong smelling or pungent vegetables	38 kinds
2. Soft and mucilaginous vegetables	46 kinds
3. Vegetables producing fruits on or near the ground	12 kinds
4. Aquatic vegetables	6 kinds
5. Mushrooms	31 kinds
Fruits	
1. The five fruits	16 kinds
2. Mountain fruits	36 kinds
3. Exotic fruits	40 kinds
4. Aromatics	17 kinds
5. Plants producing fruits on or near the ground	10 kinds
6. Aquatic fruits	6 kinds
7. Various fruits not used in medicine	22 kinds
Trees	
1. Aromatic trees	41 kinds
2. Stately trees	60 kinds
3. Small trees and shrubs with dense foliage	53 kinds
4. Parasitic plants on trees	3 kinds
5. Bamboos	27 kinds
6. Miscellaneous trees and shrubs	27 kinds

edition correspond with these classes and supplement of the *Materia medica*. Plate 23 is the class of precious except 15 illustrations belonging to the *Elements*. Plate 24 is those of earth and wood medications. The wood

medications (*shing-sman*) include nectarous medications (*rtsi-sman*) and plateau medications (*thang-sman*). Plate 25 comprises plateau medications (continuous from Pl. 23) and herbal medications. Herbal medications

continue to Plates 28. The class of herbal medications is the largest in all classes.

This classification is similar to that of Li Shi-zhen's *Bencao Gangmu* in having 15 classes, but the structure of the classification is quite different (Table 1, and see Endnote 1). The Tibetan *Materia medica* gave a weight to animals. For animal products the *Materia medica* established 11 classes, but for plants it is only two (wood and herbal) or four (wood, nectarous, plateau, and herbal).

All the plants are identified by Christopher Grey-Wilson, a British authority of Sino-Himalayan plants. I agreed with his results of identification except a few cases. It is remarkable to be illustrated *Cinnamomum camphora* (yellow camphor), saffron, cardamom, nutmeg, clove, kapok, white cumin or fennel, dill, pomegranate, black pepper, and even *Capsicum*. These plants were all introduced to Tibet from various areas including the Old Tropics and the Far East. *Capsicum* was introduced from New World after Columbus. The illustration indicates that *Capsicum* arrived Tibet at least in 1703. Further investigation is necessary to reveal the interactions between different regional *Materia medica*. How to find the medical value in each indigenous plant is most interesting unsolved matter. Such knowledge is also useful for ethnobotany of related regions.

**Conclusion**—At present our knowledge on the influence to Tibetan medications is very limited. This examination on the Tibetan medications and the *Blue Beryl* made clear the necessity of further studies of various texts of Tibetan medications. Although most species of medicinal plants illustrated and described in the *Blue Beryl* are autochthonous, some were introduced from far removed regions. Medications using such introduced plant species as well as animals and minerals are similar beyond each region. At present we cannot trace the way of regional

interactions in Tibetan medications.

For the researches on ancient medications and *Materia medica*, Tibet has values prior to others. Studies combined with regional floras of Tibet will reveal the autochthonous medicines and their development. Introduced plants in the *Blue Beryl* show medicinal influences from other region.

Dr. David E. Boufford, Harvard University Herbaria, gave helpful comments on draft of the manuscript. My thanks are also due to Professor Masayuki Mikage, Kanazawa University, for his useful discussions. Preparation of this paper was supported by a Grant-in-aid for Monbusho International Scientific Research Program to Professor Mikage.

This article was presented at Tokyo Symposium for Digital Silk Roads in Tokyo organized by UNESCO, Japanese National Commission for UNESCO, and National Institute of Informatics in 2001, as titled "Interaction of local *Materia medica* through Silk-road."

病気は今日においても人類に共通する大問題である。少なくともユーラシアでは古代においては多くの地域に独自の治療法や薬物誌があった。こうした地域ごとの医療法や薬物誌は地域ごとに自然発生的に生み出されたものなのだろうか。人間の罹る病気の多くは地域を越えたものでもあり、医療法ではつねに地域外からの影響を受けてきたといえるが、実際には地域ごとに異なる医療法も発達している。このような相違点に関係することのひとつは、古代にあっては重要であった薬物の源、とくに植物の薬物資源が表裏一体のように地域植物相と密接に関係していたことである。地域植物相に有効な薬物資源を見出していく過程は単純ではないが、日本の例をみるまでもなく他地域での薬物誌での用法は参考になったにちがいない。本稿ではチベット医学・薬物誌の成立や発達について概略し、周辺に当たるインドのアユルヴェーダ、中国の本草学、その他ペルシア、アラビア、ヨーロッパの医薬からの影響を考察した。

## References

- Anonymous. 1971. Tibeto-Mongolian Materia Medica. An Illustrated Tibeto-Mongolian Materia Medica of Ayurveda. Satapitaka series, Vol. 82. Lokesh Chandra, New Delhi.
- Blunt W. and Raphael S. 1979. The Illustrated Herbal. Frances Lincoln Publishers Ltd., London.
- Bretschneider, E. 1881–1895. Botanicon Sinicum. 3 vols. Vol. 1 published first in Journal of the North-China Branch of the Royal Asiatic Society vol. 16, Article 3 in 1881 and re-issued by Trübner & Co., London in 1882; vol. 2 and 3 by Kelly & Walsh, Ltd., Shanghai in 1892 and 1895.
- Gyurme Dorje 1992. The structure and contents of the Four Tantras and Sangye Gyamtso's Commentary, the Blue Beryl. In: Parfionovitch, Y., Gyurme Dorje, and Meyer, F. (eds.) 1992. Tibetan Medical paintings. Illustrations to the Blue Beryl treatise of Sangye Gyamtso (1653–1705), 14–15 pp.
- Meyer F. 1981. Gso-ba rig-pa. Le Système Médical Tibétain. C.N.R.S., Paris.
- 1992. Introduction. In: Parfionovitch Y., Dorje G., and Meyer F. (eds.), Tibetan Medical paintings. Illustrations to the Blue Beryl treatise of Sangye Gyamtso (1653–1705), pp 2–13 pp.
- Ohba H. 1993. Thunberg och japansk botanik. In: Nordenstam B. (ed.), Carl Peter Thunberg, pp. 165–175. Atlantis, Stockholm (in Swedish).
- Parfionovitch Y., Dorje G. and Meyer F. (eds.) 1992. Tibetan Medical paintings. Illustrations to the Blue Beryl treatise of Sangye Gyamtso (1653–1705). Harry N. Abrams, Inc., New York.
- Rechung Rinpoche J. K. 1973. Tibetan Medicine. University of California, Barkley.
- Snellgrove D. L. and Richardson, H. 1986. A Cultural History of Tibet. Revised edition. Shambhala Publications, Inc., Boston.
- Snelling J. 1987. The Buddhist Handbook. A Complete Guide to Buddhist Teaching and Practice. Rider, London.
- Zysk K. G. 1991. Asceticism and Healing in Ancient India. Oxford University Press, New York.  
(University Museum, University of Tokyo)

## Endnote

## 1) Ancient Chinese materia medicae

In China the knowledge of plants for medical purpose dates back to the age of a mythical Emperor Shen-nong, who is said to have reigned in the 28th century BC, is the father of husbandry and medicine. History of Chinese materia medicae is said to begin

with the Sheng-nong's Materia medica named *Sheng-nong Bencao*.

Representative Chinese Materia medica is *Bencao Gangmu* written by Li Shi-zhen. He was born in Jianzhou, Hubei, probably in the first quarter of 16th century, and died toward the end of the same century. Li began the compilation of the Materia medica in 1552, and completed it in 1578. Li died before it was published, and his son, Li Jian-yuan presented the manuscript to the emperor in 1596. The emperor ordered it to be printed.

*Bencao Gangmu* is a Materia medica explaining the nature and properties of medicines, and to general directions for their prescription, though the greater part is devoted to natural history. He also gave the notice on the habits, form and locality of natural products, and their application for economic purposes.

Li treated several kinds of natural objects, minerals, plants, animals, etc. He explained that the term *Bencao* properly means herbal, but as the majority of medicines are derived from the plants, it is used to designate a treatise on drug in general.

System of Li's *Bencao Gangmu*

Li's *Bencao Gangmu* consists of 52 chapters in which the first is taken up with a list of the references from which extracts have been made by Li Shi-zhen for the compilation. Li listed and gave a critical review of previous 42 works on Chinese Materia medica here. The second chapter is devoted to introductory observations on Materia medica and the Chinese system of pharmacology. The 3rd and 4th are comprehend a list of various diseases and the medicines suitable for the treatment. The rest chapters, 5–52, is accounts of drugs and natural objects and their use as medicines.

All the objects are arranged under 16 classes and 62 orders, which comprise in all 1892 kinds. 16 divisions are as follows: 1.

Water, 2. Fire, 3. Earth, 4. Metals, 5. Stones, 6. Herbs, 7. Grains, 8. Vegetables, 9. Fruits, 10. Trees, 11. Insects, 12. Scaly Animals, 13. Shelly Animals, 14. Birds, 15. Quadrupeds, 16. Man. In Plants each divisions are subdivided into numerous orders as shown in Table 1.

It cannot be denied that European *Materia medica* is introduced into Arabian, Persian, also Central and East Asian medications via ancient traders trails like silk-road. On the contrary, medications and medical materials of Arabia, Persia, India and China might be introduced into Europe. In China the knowledge of plants for medical purpose dates back to the age of a mythical Emperor Shen-nong, who is said to have reigned in the 28th century BC, is the father of husbandry and medicine. History of Chinese *Materia medica* is said to begin with Shen-nong's *Bencao* king of the Emperor Shen nung.

Li Shi-zhen's *Bencao Gangmu* is studied in detail by Bretschneider (1881–95). Li's *Bencao Gangmu* was known in Japan soon after the publishing, and gave strong influence to Japanese herbals and pharmacology. It was translated into Japanese with Japanese title *Honzokômoku* by Jakusui (Nobuyoshi) Ina(o) in 1714. Ekiken (Atsunobu) Kaibra published the first original Japanese *Materia medica* under the strong influence of Li Shi-zhen's *Bencao Gangmu* in 1709 (Ohba 1993). Ranzan Ono wrote a commentary on Li's *Bencao Gangmu* in 1804, with title *Honzokômoku-keimô* in 35 volumes in which he displayed a considerable critical judgments. It is noticeable that Ranzan proved that the same or similar natural productions of the majority of those of China are found in Japan. This commentary was revised and enlarged by his grandson and published in 1847 (Ohba 1993).

#### マルバシマザクラとシマザクラの学名 (大場秀章)

Hideaki OHBA: On the Scientific Names of the Species of *Hedyotis* Section *Leptopetalum* (Rubiaceae) (Notulae ad plantas japoniae 12)

豊田武司氏の『小笠原植物図譜』(1981年, アボック社刊)の第2版が出版されることになり, 出版元のアボック社編集局の森 弦一氏から学名についての問い合わせがあり, 検討した. マルバシマザクラとシマザクラの学名は本誌の読者にも興味深いと思われるものもあったので, 簡単に紹介してみたい.

フタバムグラ属 *Hedyotis* は, およそ250種を含む大きな属で, 日本には9種が知られている (Yamazaki 1993). マルバシマザクラとシマザクラは, とともに小笠原諸島の固有種で, 日本産のフタバムグラ属の中では革質の大きな葉と長さ8–13 mmになる花冠をもつことで, 他種から容易に区別され, マルバシマザクラ亜属 (subgen. *Leptopetalum*) 中の上記2種からなるマルバシマザクラ節 (sect.

*Leptopetalum*) に分類される (Fosberg and Sachet 1991). またマルバシマザクラとシマザクラは葉形, 花柄の毛, 花冠の大きさに明らかな違いが認められる (Yamazaki 1993).

最近の *Flora of Japan* (Iwatsuki et al., vol. IIIa, 1993) で, Yamazaki は学名としてマルバシマザクラに *Hedyotis mexicana* (Hook. & Arn.) Hatus. を, シマザクラに *H. grayi* Hook.f. を用いているが, マルバシマザクラは *Hedyotis hookeri* (K.Schum.) Fosberg, シマザクラは *H. leptopetala* A.Gray とするのが正しい. その理由を以下に述べる. なお, ここに書く多くは Fosberg と Sachet (1991) がすでに指摘していることを記しておく.

マルバシマザクラは, 1838年に Hooker と Arnott によって単型新属として *Leptopetalum mexicanum* の名前で記載されたのが最初であ